

4.6 HYDROLOGY AND WATER QUALITY

Based on the findings of the IS, the proposed West Gateway project may or would result in less than significant impacts on hydrology and water quality with the application of mitigation measures. The analysis in the following sections focuses on the existing conditions in the study area, the analysis methodology, thresholds of significance, the potential hydrology and water quality impacts of the West Gateway project related to compliance with urban runoff management and mitigation as needed.

4.6.1 ENVIRONMENTAL SETTING RELATED TO HYDROLOGY AND WATER QUALITY

The project site is located within the 824 square mile Los Angeles River watershed, which is one of the largest in the Regional Quality Control Board's jurisdiction. It is also one of the most diverse in terms of land use patterns. Approximately 324 square miles of the watershed are covered by forest or open space land including the area near the headwaters which originate in the Santa Monica, Santa Susana, and San Gabriel Mountains. The rest of the watershed is highly developed. The river flows through the San Fernando Valley past heavily developed residential and commercial areas. From the Arroyo Seco, north of downtown Los Angeles, to the confluence with the Rio Hondo, the river flows through industrial and commercial areas and is bordered by rail yards, freeways, and major commercial and government buildings. From the Rio Hondo to the Pacific Ocean, the river flows through industrial, residential, and commercial areas, including major refineries and petroleum products storage facilities, major freeways, rail lines, and rail yards serving the Ports of Los Angeles and Long Beach.

Site Drainage

The City of Long Beach was divided into thirty major drainage basins. Within each major basin there are sub-basins for major drains 36 inches in diameter or larger that have their outfall to a regional drain, regional retention basin or the Harbor. Many major basins contain two or more sub-basins. The sub-basins are further sub-divided into drainage areas contributing runoff to a drainage node.

The project site is relatively flat, with very little variation in topography. The project area is developed with occupied and vacant residential and retail structures; the remainder of the project area is primarily covered with paved surfaces.

Stormwater runoff from the project site and the surrounding area currently drains to the local public storm drain system and then is deposited into the regional drainage channels. The flows would drain along West Broadway before ultimately draining into the Los Angeles River and then the Pacific Ocean. The relatively flat project site is located in a highly urbanized area and comprises mostly impervious surfaces. Therefore, runoff from the existing site has a low volume and is not moving very fast because of the flatness of the site.

4.6.1.1 Federal and State Programs

Water quality objectives for all waters in the state are established under applicable provisions of Section 303 of the federal Clean Water Act (CWA) and the state Porter-Cologne Water Quality Control Act.

The State of California State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB) are responsible for assuring implementation of and compliance with the federal CWA and the Porter-Cologne Water Quality Control Act provisions.

4.6.1.2 National Pollutant Discharge Elimination Systems Permits

The National Pollutant Discharge Elimination System (NPDES) permit system was established as part of implementation of the CWA to regulate municipal and industrial discharges to surface waters of the United States. The CWA prohibits the discharge of any pollutant into navigable waters from a point source unless the discharge is in compliance with a NPDES Program permit. The purpose of the NPDES program is to manage urban storm water runoff minimizing pollution of the environment to the maximum extent practicable. The NPDES program consists of characterizing receiving water quality, identifying harmful constituents, targeting potential sources of pollutants, and implementing a Comprehensive Storm Water Management Program.

The NPDES Program requires local agencies and project applicants to obtain permits to discharge storm water into waters of the State. The regulations provide that discharges of storm water to waters of the United States from construction activities are effectively prohibited unless the discharge is conducted in compliance with an NPDES permit. Construction activities subject to this general Permit include clearing, grading, disturbances to the ground such as stockpiling, or excavation. Disturbance refers to exposed soil resulting from activities such as clearing, grading, and excavating. Construction activities can include road building, construction of buildings and demolition.

Each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. Section 402(p) of the CWA (an amendment to Section 404) established a framework for regulating construction storm water discharges under the NPDES Program. Section 307 describes the factors that the United States Environmental Protection Agency (EPA) must consider in setting effluent limits for priority pollutants.

4.6.1.3 State Water Quality Regulations

In California, the NPDES Program is administered by the nine RWQCB. Each RWQCB is required to adopt a Water Quality Control Plan, or Basin Plan, as required by Section 303 of the CWA and the Porter-Cologne Water Quality Control Act. The plans establish water quality standards and objectives for California rivers and their tributaries. The Porter-Cologne Water Quality Control Act requires that basin plans recognize and reflect regional differences in existing water quality, the beneficial uses of the region's ground and surface waters, local water quality conditions and problems, and implement a program for achieving water quality objectives (California Water Code, Section 13050[j]).

4.6.1.4 Regional Water Quality Regulations

General Construction Activity Storm Water NPDES permits (General Permit) are issued for storm water discharge by the RWQCB. The project site is within the RWQCB, Los Angeles Region. Continuing core regulatory activities that have been integrated into the watershed management approach include (but are not limited to) renewal/revision of NPDES permits including those covered

under Regional Board general permits. Compliance inspections, review of monitoring reports, response to complaints, and enforcement actions relative to the watershed's NPDES permits will continue. Because of the large number of permits, renewal of permits in this watershed during its first cycle was spread over two years. Due to limited resources, only the basic regulatory activities are performed: review of dischargers' monitoring reports, minimum necessary inspections and sampling, issuance/renewal of permits, levels 1 and 2 enforcement actions (noncompliance and violation notification), case handling, and answering inquiries from the public.

The Los Angeles River Watershed is in Los Angeles County which has been covered by a municipal storm water permit since 1990. The third five-year permit was adopted on December 13, 2001. This permit covers Los Angeles County and all the incorporated cities, except the City of Long Beach, which was issued a separate municipal storm water permit in 1999. The Los Angeles County Flood Control District is the Principal Permittee. Under the requirements of the permit, the Permittees will implement the Storm Water Quality Management Plan which includes the following components: (a) Program Management; (b) Public Information and Participation Program; (c) Industrial/Commercial Facilities Program; (d) Development Planning Program; (e) Programs for Construction Sites; (f) Public Agency Activities; and (g) Illicit Connection/Illicit Discharge Elimination Program. These programs collectively are expected to reduce pollutants in storm water discharges to the maximum extent practicable. In addition, the County will conduct a storm water monitoring program to estimate mass emissions and toxicity of pollutants in its waters, evaluate causes of toxicity, and several other components to characterize storm water discharges and measure the effectiveness of the Storm Water Quality Management Program.

4.6.1.5 Local Water Quality Regulations

Los Angeles Regional Board

The Los Angeles Regional Board's Basin Plan is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Specifically, the Basin Plan (i) designates beneficial uses for surface and ground waters, (ii) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy, and (iii) describes implementation programs to protect all waters in the Region. In addition, the Basin Plan incorporates (by reference) all applicable State and Regional Board plans and policies and other pertinent water quality policies and regulations. Those of other agencies are referenced in appropriate sections throughout the Basin Plan.

The Basin Plan is a resource for the Regional Board and others who use water and/or discharge wastewater in the Los Angeles Region. Other agencies and organizations involved in environmental permitting and resource management activities also use the Basin Plan. Finally the Basin Plan provides valuable information to the public about local water quality issues.

The Basin Plan is reviewed and updated as necessary. Following adoption by the Regional Board, the Basin Plan and subsequent amendments are subject to approval by the State Board, the State Office of Administrative Law (OAL), and the United States Environmental Protection Agency (USEPA).

An important requirement of both the Los Angeles County and the City of Long Beach municipal

storm water permits is implementation of the Standard Urban Storm Water Mitigation Plans (SUSMPs) and numerical design standards for Best Management Practices (BMPs), which municipalities began implementing in February 2001. The final SUSMP was issued on March 8, 2000, and amended in the permit, adopted on December 13, 2001. The SUSMP is designed to ensure that storm water pollution is addressed in one of the most effective ways possible, i.e., by incorporating BMPs in the design phase of new development and redevelopment. It provides for numerical design standards to ensure that storm water runoff is managed for water quality and quantity concerns. The purpose of the SUSMP requirements is to minimize, to the maximum extent practicable, the discharge of pollutants of concern from new and redevelopment.

City of Long Beach

The following excerpt from the City of Long Beach website regarding the Long Beach Storm Water Management Program explains the mission of the program.

The objective of the federal Clean Water Act (CWA) is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Section 402(p) of the CWA, as amended by the Water Quality Act of 1987, requires NPDES permits for storm water discharges from municipal separate storm sewers (MS4s) to waters of the United States. Section 402(p)(3)(B) requires that permits for MS4s: "(i) may be issued on a system - or jurisdiction-wide basis; (ii) shall include a requirement to effectively prohibit non-storm water discharges into the storm sewers; and (iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants."

The objectives of this program are to effectively prohibit non-storm water discharges and to reduce the discharge of pollutants to the maximum extent practicable (MEP) such that these discharges will not adversely impact the beneficial uses of our receiving waters. Essentially, the City's ultimate objective is to comply with the federal Clean Water Act and the state Porter-Cologne Water Quality Control Act.

To meet these objectives, the City is fully implementing the Long Beach Storm Water Management Program (LBSWMP). The LBSWMP is a comprehensive program containing several elements, practices and activities aimed at reducing or eliminating pollutants in storm water to the maximum extent practicable (MEP). Source: <http://www.lbstormwater.org/plan/>.

The LBSWMP requires at a minimum, all projects to implement the following BMPs to as applicable.

- Water Conservation Practices
- Material Delivery and Storage
- Material Use
- Spill Prevention and Control
- Solid Waste Management
- Hazardous Waste Management
- Concrete Waste Management
- Vehicle and Equipment Cleaning
- Vehicle and Equipment Fueling

- Vehicle and Equipment Maintenance

A project that disturbs more than 1 acres of soil but less than 5 acres is a Priority project. The project applicant will be required to prepare a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP will include the following elements:

- Project Information and Description
- Site Map
- Appropriate construction site BMPs selected from the list adopted by the Regional Board on April 22, 1999.
- Appropriate Best Management Practices for Erosion and Sediment Control Practices (especially, if construction takes place during the rainy season) to reduce sediment from entering the storm drain system to the extent practicable
- Owner/Contractor Certification

4.6.1.6 Underground Water Quality

The Long Beach Water Department receives most of its drinking water from two sources, the large underground aquifer below the City of Long Beach known as the Central Basin, and from imported water delivered by the Metropolitan Water District (MWD) of Southern California (City of Long Beach General Plan Land Use and Mobility Elements Update Technical Background Report, Chapter 5, Infrastructure, March 2004). Refer to Section 4.12, Utilities and Service Systems for more detail regarding water supply.

Forty-two percent of the City's total water supply is provided by groundwater. Rain and snowmelt from the San Gabriel Mountains watershed travel through washes and creeks into the San Gabriel River and the Whittier Narrows Basin. From there, it percolates underground through sand and water beds where it begins a lengthy subsurface journey to the Central Basin aquifer and ultimately to the City of Long Beach. Pumps extract this groundwater from twenty-six different wells and deliver it to the Water Department's groundwater treatment plant where it processed over 11 billion gallons of drinking water, nearly half the City's annual water demand. Overall, more than 25 billion gallons of high quality water were delivered to the Long Beach community. Water is treated at the plant, then delivered to the Department's Alamitos Reservoir Facility, where it is then distributed to Long Beach residences and businesses.

According to the Phase 1 Assessments conducted for Parcels 9, 10 and 11, the West Gateway project site is located in the southeastern portion of the West Coast Groundwater Basin and the regional basin is the Gage Aquifer in the Lakewood Formation. Based on earlier site investigations (DWR, June 1961), groundwater in the vicinity is approximately 30 to 50 feet below grade. There are no known regional groundwater contamination problems in the area. However, groundwater has been impacted locally by saltwater intrusion and is not used as a drinking water source.

4.6.1.7 Surface Water Quality

Storm water runoff carries typical urban pollutants such as suspended sediments and contaminants associated with motor vehicle operation including oils and grease, as well as fertilizers and pesticides

associated with grounds maintenance. Studies to characterize typical urban runoff quality conducted as a part of the Nationwide Urban Runoff Program identified heavy metals as the most prevalent priority pollutant constituents. Concentrations of heavy metals in urban runoff were found, in many cases, to exceed EPA ambient water quality criteria and drinking water standards. Organic priority pollutants were also identified, but at a lower frequency and at lower concentrations than heavy metals. Constituents found in typical urban runoff vary as a result in differences in rainfall intensity and occurrence, geographic features, land use, as well as vehicle traffic and percent of impervious surfaces. The EPA estimates that short term runoff from construction sites without adequate erosion control can contribute more sediment to receiving waters than that deposited by natural processes over a period of decades.

4.6.2 METHODOLOGY RELATED TO HYDROLOGY AND WATER QUALITY

Water quality impacts were evaluated by analyzing the proposed construction and operation associated with the project and whether these activities would significantly impact water quality. Guidelines as set forth by the RWQCB and the LBSWMP for this area were used to establish both significant impacts and conditions that would be applied to the project in order to comply with these plans and regulations, whether or not the impact is significant.

Hydrology impacts were evaluated by analyzing the design and location of the project site change in amount of runoff to establish whether there is an adverse impact to local drainage.

4.6.3 THRESHOLDS OF SIGNIFICANCE RELATED TO HYDROLOGY AND WATER QUALITY

The following thresholds of significance are guided by the City of Long Beach CEQA Checklist. For the purposes of this EIR, impacts would be considered significant if the project would:

Hydrology and Water Quality

- Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
- Otherwise substantially degrade water quality.

National Pollution Discharge Elimination System

- Result in a significant loss of pervious surface.
- Create a significant discharge of pollutants into the storm drain or water way.
- Violate any best management practices of the National Pollution Elimination System permit.

4.6.4 IMPACTS RELATED TO HYDROLOGY AND WATER QUALITY

4.6.4.1 Long Term Storm Water Flows

Hydrology/Drainage Impacts

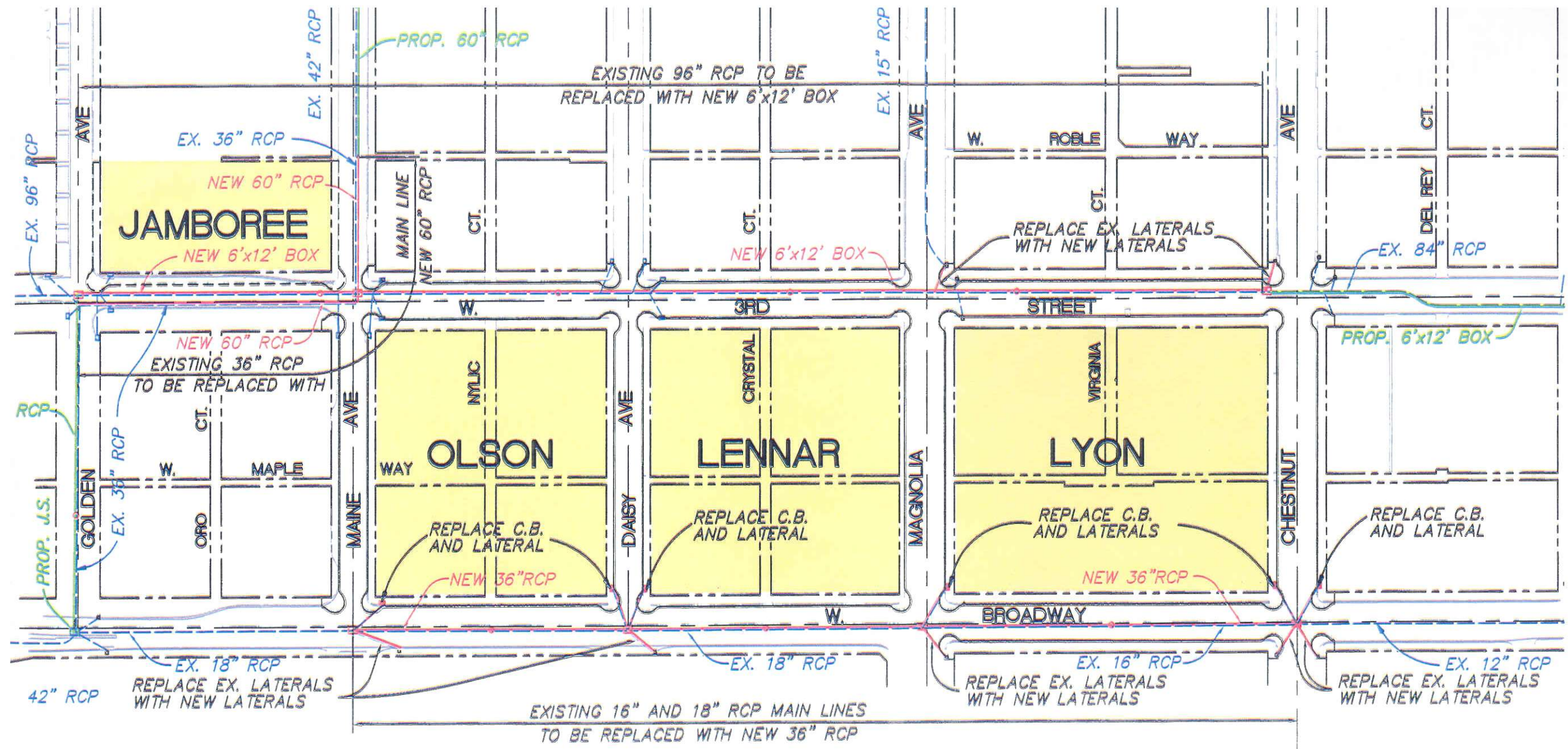
As stated above, the site is currently covered with mostly impervious surfaces. Implementation of the proposed project would not substantially change the runoff conditions by redeveloping the approximate 11.7-acre site because the only pervious surfaces are several unpaved the vacant lots. The site is basically flat with varying low grades ranging from an estimated two to three percent. Therefore, no significant impacts are expected to occur with regard to drainage and hydrology. Stormwater will be collected and directed to local storm drains. The proposed drainage plan is shown in Figure 4.6-1.

Water Quality Impacts

The proposed project has the potential to result in long term impacts to water quality due to the addition of urban pollutants and the increase in site activities associated with the new development. Typical urban pollutants associated with new development include pesticides, fertilizers, vehicle hydrocarbons, grease, oil, plastics, paint and litter. The project would generate low levels of water quality contaminants which would be carried in storm water runoff from paved surfaces to the Los Angeles River and to the Pacific Ocean. Applicable LBSWMP, RWQCB and NPDES permit water pollution controls are required to reduce potential water quality impacts to downstream water bodies.

4.6.4.2 Short Term Storm Water Flows

Implementation of the project would require demolition, grading, excavation and other construction-related activities that could cause soil erosion from exposed soil at an accelerated rate during storm events if not properly controlled. A major source of storm water pollution common to many construction site relates to earthmoving activities. The major pollutant generated by earthmoving activities is sediment, typically produced by wind and/or water erosion. Site clearance and excavation activities can increase erosion. Construction Best Management Practices (BMPs) may include the placement of gravel bag dikes, installation of silt fencing, and general good housekeeping practices intended to ensure that sediment and other construction related materials are not discharged in storm water runoff to the Pacific Ocean. Potential pollutants include but are not limited to: solid or liquid chemical spills; wastes from paints, stains, sealants solvents, detergents, glues, lime, pesticides, herbicides, fertilizers, wood, preservatives, asbestos fibers, paint flakes, and



LEGEND

•	EXISTING CATCH BASIN	■	PROPOSED CATCH BASIN
□	EXISTING JUNCTION STRUCTURE	□	PROPOSED S.D. JUNCTION STRUCTURE
---	EXISTING STORM DRAIN LINE	○	PROPOSED S.D. MANHOLE SHAFT
■	REPRESENTS DEVELOPER'S SITE	—	NEW STORM DRAIN LINE
		—	PROPOSED STORM DRAIN LINE (MASTER PLAN BY OTHERS)

Figure 4.6-1
Proposed Drainage Plan for Parcels 9, 10 and 11

stucco fragments; fuels; oils; lubricants; hydraulic, radiator or battery fluids; concrete and related cutting or curing residues; floatable wastes; engine, steam cleaning, street cleaning or degreasing wastes; and superchlorinated potable water line flushing and testing.

The amount and rate of erosion will vary depending on a number of factors, including the time of year of construction, the size of the development site, the amount and intensity of rainfall, and the amount of natural and/or artificial fill. Storm water runoff from the project site during construction could contain soils and sediments from these activities. The State's General Construction Permit requires the preparation of a Storm Water Pollution Prevention Plan (SWPPP) to control possible pollutant loading in storm water discharges from the project site resulting in land disturbance of one or more acres, or less than one acre where the construction project is a part of a larger common plan of development.

A SWPPP describes the measures or practices to control pollutants during both the construction and post-construction phases of the project. A SWPPP typically identifies project design features and a list of target structural and non-structural BMPs that will be used to control, prevent, remove or reduce pollution. Compliance with the SWPPP is monitored by site inspections from the RWQCB. In addition to the requirements of the NPDES program, provisions of the Uniform Building Code and the City's Grading Code also require reduction of erosion and sedimentation impacts.

4.6.5 MITIGATION MEASURES RELATED TO HYDROLOGY AND WATER QUALITY

The project would comply with all relevant Standard Conditions of Approval set forth by the City of Long Beach. The construction site shall be maintained in such a condition that a storm does not carry wastes or pollutants off the site. Discharges other than storm water (non-storm water discharges) are authorized under California General Permit for Storm Water Discharges associated with Construction Activity only where they do not cause or contribute to a violation of any water quality standards and are controlled through implementation of appropriate BMPs for elimination or reduction of pollutants.

Non-storm water discharges must be eliminated or reduced to the extent feasible. These conditions serve to mitigate water quality impacts as required by the provisions of the Long Beach Storm Water Management Program (LBSWMP). A SWPPP and a Water Quality Management Plan (WQMP) will be included as part of the permitting to provide appropriate oversight regarding water quality and water pollution abatement. Therefore, the performance standards included in the SWPPP are enumerated below and included as a part of the Mitigation Plan and Monitoring Program for the proposed project. In addition, a WQMP addressing post-construction runoff is included in Mitigation Measure 3.

Hydrology/Drainage

- W-1 The applicant shall construct facilities on the project site to transport storm water from the site to the City's drainage facilities. All such facilities will be subject to the review and approval of the City Engineer and shall be installed prior to the issuance of occupancy permits.

For Construction (SWPPP)

- W-2 Prior to the commencement of soil disturbing activities, the project proponent shall submit for approval to the RWQCB, a Notice of Intent to be covered under the Storm Water Permit.

Additionally, the project proponent shall prepare a SWPPP which will require implementation of Best Management Practices (BMPs). The project proponent shall implement the SWPPP and will modify the SWPPP as directed by the Storm Water Permit. These provisions shall be included in the plan notes. The SWPPP shall include all of or a combination of specific BMPs as follows:

- a) Sediment for areas disturbed by construction shall be retained on site using structural controls such as sandbags, fencing or retention ponds.
- b) Stockpiles of soil shall be properly contained to eliminate or reduce sediment transport from the site to the streets, drainage facilities or adjacent properties via runoff, vehicle tracking or wind.
- c) Appropriate BMPs for construction-related materials, wastes, spills or residues shall be implemented to minimize transport for the site to streets, drainage facilities or adjoining properties.
- d) Runoff from equipment and vehicle washing shall be contained at construction sites unless treated to reduce or remove sediment and other pollutants.
- e) All construction contractor and subcontractor personnel are to be made aware of the required BMPs and good housekeeping measures for the project site and any associated construction staging areas.
- f) At the end of each day of construction activity, all construction debris and waste materials shall be collected and properly disposed of in trash or recycle bins.
- g) Any designated smoking area shall have an appropriate cigarette waste receptacle that is fitted to not allow cigarette butts to enter storm water or drains during rain or high winds. All contractor and subcontractor personnel will be directed to dispose of cigarette butts in these receptacles.

For Post-Construction (WQMP)

- W-3 Prior to finalizing design plans, a WQMP shall be prepared and approved by the City of Long Beach addressing post construction storm water runoff. This will consist primarily of structural BMPs addressing the urban runoff from the site. As part of the final design plans for the parking lot, drainage for the parking area shall be fitted with structural BMPs to reduce or eliminate urban runoff in the form of catch basins with filters (most likely fossil) or other equivalent filtration device that are regularly maintained and cleared so as to remain effective throughout the storm season. Regular clearing of large debris after a storm shall be incorporated into the ongoing maintenance program for the West Gateway project site.

4.6.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION RELATED TO HYDROLOGY AND WATER QUALITY

Mitigation set forth in this EIR along with the implementation of the water quality requirements would mitigate the project's impacts to a level that is considered less than significant. Compliance with the LBSWMP, Grading Code and Uniform Building Code would ensure that storm water runoff would not result in any significant adverse impacts to adjacent properties, the Los Angeles River and local water bodies and beaches downstream.